

CLAIMS

1. In a tug device for ground moving small aircraft having at least one front wheel, said device including a frame, a handle for connecting a drive wheel driven by a drill having a variable output and connected to the drive wheel by a drive shaft and gear box, said frame having an engaging member for attachment to said aircraft, the improvement comprising:

a pair of ground engaging drive wheels mounted on an axle attached to said frame and positioned on both sides of said gear box, said gear box having connecting box for selectively aligning the handle for a first position and a second position with respect to the ground to permit engagement with two different elevations on said aircraft;

dolly wheels removably attached to said device, said dolly wheels being positioned to permit movement of said device without said drive wheels contacting said ground, said dolly wheels being further positioned to be raised above said ground when said device is engaged with said aircraft in said two different elevations;

alignment marks on said connecting box for insuring said handle is aligned in said first and second positions to drive said drive wheels in a straight line direction; and

a vertical pivot shaft supporting said connecting box on said frame to permit said handle to pivot said wheels about said pivot shaft and steer said device.

2. The device of claim 1, wherein said device further includes a locking latch for selectively preventing and permitting pivot of said drive wheels about said pivot shaft.

3. The device of claim 2, wherein said locking latch comprises a release bar on the upper end of said handle, a rod connected at one end to said release bar and connected to a latch element at its other end, and said connecting box includes a latch element engaging member for selectively engaging said latch to permit and prevent movement of said wheels about said pivot shaft.

4. The device of claim 3, wherein said latch element includes a biasing element for biasing said latch element in a position for engagement of said latch element with said latch element engaging member, said latch element being positioned to tilt out of engagement with said latch element engaging member upon movement of said release bar in one direction and tilt into engagement upon movement of said release bar in an opposite direction.

5. The device of claim 1, wherein said dolly wheels include an axle supporting said dolly wheels and a tube member extending from said axle and said gear box includes a tube receiving member extending toward said tube member for engagement and mounting said dolly wheels on said gear box, said tube member and said tube receiving member each including pin receiving holes alignable to receive a pin to fasten said tube member to said tube receiving member.

6. The device of claim 1, wherein said handle is pivotable about said

7. In a tug device for ground moving small aircraft having at least one front wheel, said device including a frame, a handle for connecting a drive wheel driven by a drill having a variable output and connected to the drive wheel by a drive shaft and gear box, said frame having an engaging member for attachment to said aircraft, the improvement comprising:

a pair of ground engaging drive wheel means for driving said device, said wheel means being mounted on an axle attached to said frame and positioned on both sides of said gear box, said gear box having connecting box means for selectively aligning the handle for a first position and a second position with respect to the ground to permit engagement with two different elevations on said aircraft;

dolly wheel means for moving said device, said dolly wheel means being removably attached to said device, said dolly wheel means being positioned to permit movement of said device without said drive wheel means contacting said ground, said dolly wheel means being further positioned to be raised above said ground when said device is engaged with said aircraft in said two different elevations;

alignment means on said connecting box for insuring said handle is aligned in said first and second positions to drive said drive wheel means in a straight line direction; and

vertical pivot shaft means for supporting said connecting box means on said frame to permit said handle to pivot said drive wheel means about said pivot shaft means and steer said device.

8. The device of claim 7, wherein said device further includes a locking latch means for selectively preventing and permitting pivot of said drive wheel means about said pivot shaft means.

9. The device of claim 9, wherein said locking latch means comprises a release bar on the upper end of said handle, a rod connected at one end to said release bar and connected to a latch element at its other end, and said connecting box includes a latch element engaging member for selectively engaging said latch to permit and prevent movement of said drive wheel means about said pivot shaft means.

10. The device of claim 9, wherein said latch element includes a biasing element for biasing said latch element in a position for engagement of said latch element with said latch element engaging member, said latch element being positioned to tilt out of engagement with said latch element engaging member upon movement of said release bar in one direction and tilt into engagement upon movement of said release bar in an opposite direction.

11. The device of claim 7, wherein said dolly wheel means include an axle supporting said dolly wheel means and a tube member extending from said axle and said gear box includes a tube receiving member extending toward said tube member for engagement and mounting said dolly wheels on said gear box, said tube member and said tube receiving

member each including pin receiving holes alignable to receive a pin to fasten said tube member to said tube receiving member.

12. The device of claim 7, wherein said handle is pivotable about said drive wheel means axle from an operating position where said handle aligns said engaging member for attachment to said aircraft and a storage position where said handle is approximately parallel to said ground.

13. In a tug device for ground moving small aircraft having at least one front wheel, said device including a frame, a handle for connecting a drive wheel driven by a drill having a variable output and connected to the drive wheel by a drive shaft and gear box, said frame having an engaging member for attachment to said aircraft, the improvement comprising:

a pair of ground engaging drive wheel means for driving said device, said wheel means being mounted on an axle attached to said frame and positioned on both sides of said gear box, said gear box having connecting box means for selectively aligning the handle for a first position and a second position with respect to the ground to permit engagement with two different elevations on said aircraft;

dolly wheel means for moving said device, said dolly wheel means being removably attached to said device, said dolly wheel means being positioned to permit movement of said device without said drive wheel means contacting said ground, said dolly wheel means being further positioned to be raised above said ground when said device is engaged

with said aircraft in said two different elevations, said dolly wheels include an axle supporting said dolly wheels and a tube member extending from said axle and said gear box includes a tube receiving member extending toward said tube member for engagement and mounting said dolly wheels on said gear box, said tube member and said tube receiving member each including pin receiving holes alignable to receive a pin to fasten said tube member to said tube receiving member;

alignment means on said connecting box for insuring said handle is aligned in said first and second positions to drive said drive wheel means in a straight line direction, said handle being pivotable about said drive wheel axle from an operating position where said handle aligns said engaging member for attachment to said aircraft and a storage position where said handle is approximately parallel to said ground;

vertical pivot shaft means for supporting said connecting box means on said frame to permit said handle to pivot said drive wheel means about said pivot shaft means and steer said device; and

a locking latch for selectively preventing and permitting pivot of said drive wheels about said pivot shaft, said locking latch comprising a release bar on the upper end of said handle, a rod connected at one end to said release bar and connected to a latch element at its other end, and said connecting box includes a latch element engaging member for selectively engaging said latch to permit and prevent movement of said wheels about said pivot shaft.

14. The device of claim 13, wherein said latch element includes a biasing element for biasing said latch element in a position for

engagement of said latch element with said latch element engaging member, said latch element being positioned to tilt out of engagement with said latch element engaging member upon movement of said release bar in one direction and tilt into engagement upon movement of said release bar in an opposite direction.